BUREAU OF
RECLAMATION

American River Group

1:30 PM – 3:30 PM
Conference Line: +1 (321) 209-6143; Access Code: 985 598 947#
Webinar: Join Microsoft Teams Meeting

Thursday, May 18th, 2023

Agenda

1. Introductions
2. Announcements
3. Housekeeping
    a. Meeting will be recorded for notetaking purposes
4. Fisheries Update
    a. CDFW
    b. CFS
    c. PSMFC
5. Operations Forecast
    a. SMUD
    b. PCWA
6. Central Valley Operations
7. Discussion
    a. Temperature Management Planning
8. Next Meetings:
    a. Thursday, June 15th, 1:30-3:30pm

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE

Provisional Data Subject to Revision

NIMBUS FISH HATCHERY

Presented by Jennifer O'Brien, CDFW, 916-358-2900, jennifer.obrien@wildlife.ca.gov

- CWT Tagging is ongoing.
    - Currently tagging raceway D
- 855,000 Chinook Salmon smolts were released into the LAR on 5/16/2022
- Steelhead are still in indoor tanks

JUVENILE SALMONID MONITORING

Presented by Jennifer O'Brien, CDFW, 916-358-2900, jennifer.obrien@wildlife.ca.gov

- 82 juvenile Chinook Salmon and 11 steelhead trout observed thus far
- Each site is sampled once a month
- Remaining sites will be seined and/or snorkeled next week
- Seine and snorkel sites are variable based on river conditions
    - Currently unable to monitor at Upper Sunrise and Paradise Beach. Sailor Bar and Howe Avenue are substitutes at this time.

Table 1: Juvenile salmonids observed during Lower American River juvenile salmonid monitoring seine and snorkel surveys

Mon.	Salmonids	Upper Reach	Upper Reach	Upper Reach	Upper Reach	Upper Reach	Upper Reach	Upper Reach	Middle Reach	Middle Reach	Middle Reach	Lower Reach	Lower Reach
N/A	N/A	Nimbus Basin Main	Nimbus Basin Side	Upper Sunrise/Sailor Bar Main	Upper Sunrise/Sailor Bar Side	Lower Sunrise Main	Lower Sunrise Side	Rossmoor	Riverbend Main	Riverbend Side	Gristmill	Watt	Paradise Bech/ Howe Avenue
April	CS	***	0	1	1	0	***	2	0	16	30	2	0
April	SH	***	4	0	0	0	***	1	0	2	1	0	0
May	CS	N/A	N/A	N/A	N/A	3	***	10	N/A	N/A	1	16	N/A
May	SH	N/A	N/A	N/A	N/A	0	***	0	N/A	N/A	3	0	N/A

Table 2: Summary of total salmonids observed during juvenile monitoring in the Lower American River

Category	Upper Reach	Middle Reach	Lower Reach	Total
Chinook Salmon	17	47	18	82
Steelhead Trout	5	6	0	11

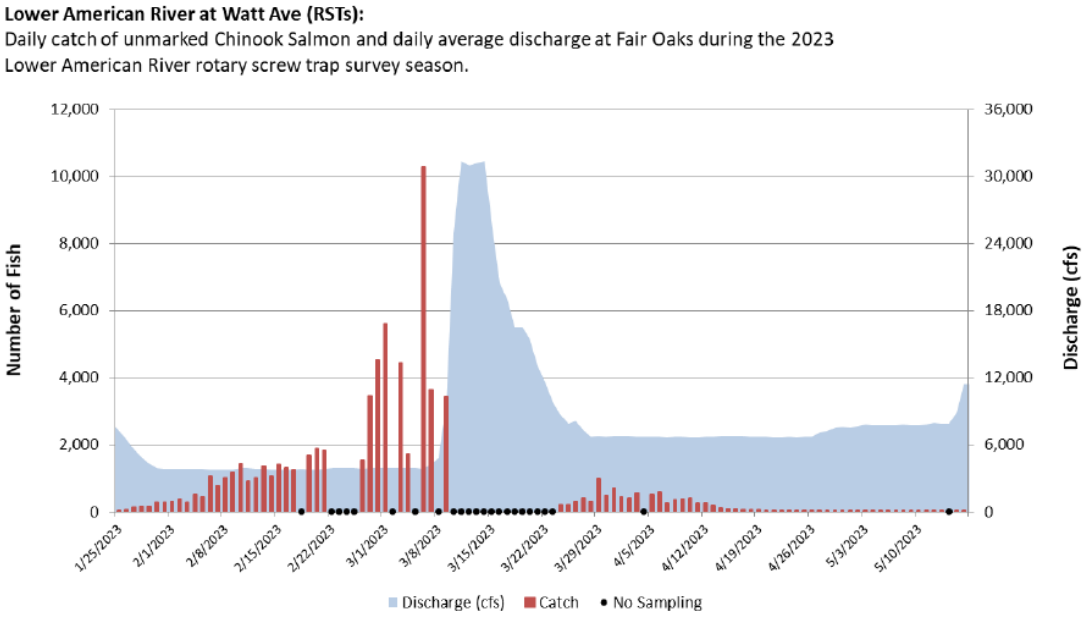
Table 3. Unmarked Juvenile Chinook Salmon (length-at-date):

Fall	Late Fall	Spring	Winter
69,411	512	24	15

13 adipose clipped Chinook Salmon at approximately 78 mm (68 - 87 mm) have also been captured beginning March 30th.

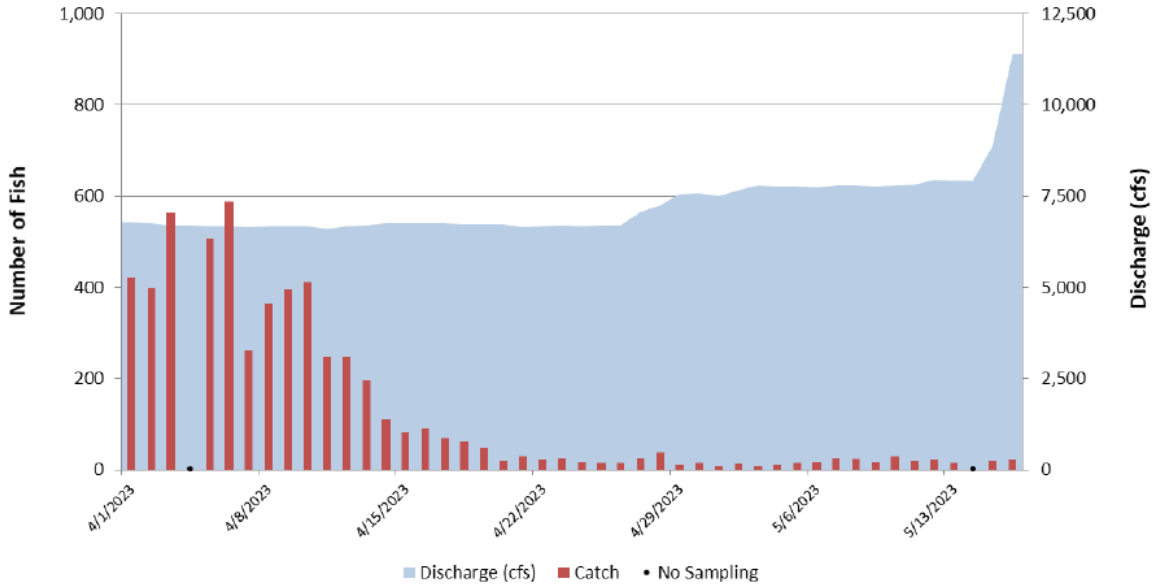
Table 4. Unmarked O. mykiss (life stage):

Fry	Parr	Smolt	Adult
162	2	1	0



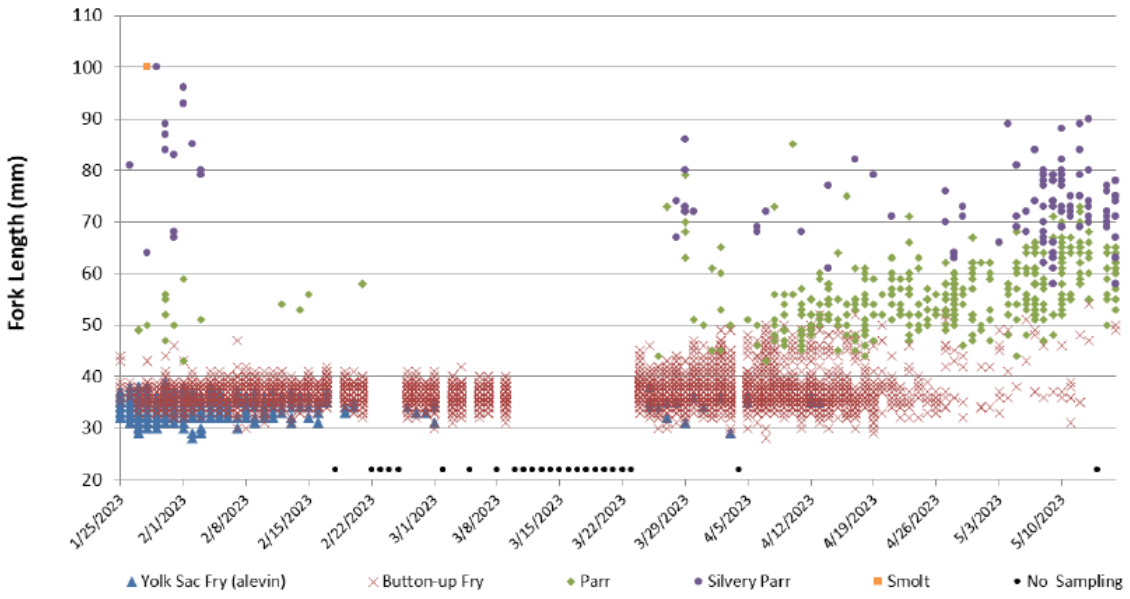
Lower American River at Watt Ave (RSTs) – Daily catch of unmarked Chinook Salmon and daily average discharge at Fair Oaks during the 2023 Lower American River rotary screw trap survey season.

Lower American River at Watt Ave (RSTs):
Daily catch of unmarked Chinook salmon and daily average discharge at Fair Oaks from April 1st to May 16th during the 2023 Lower American River rotary screw trap survey season.



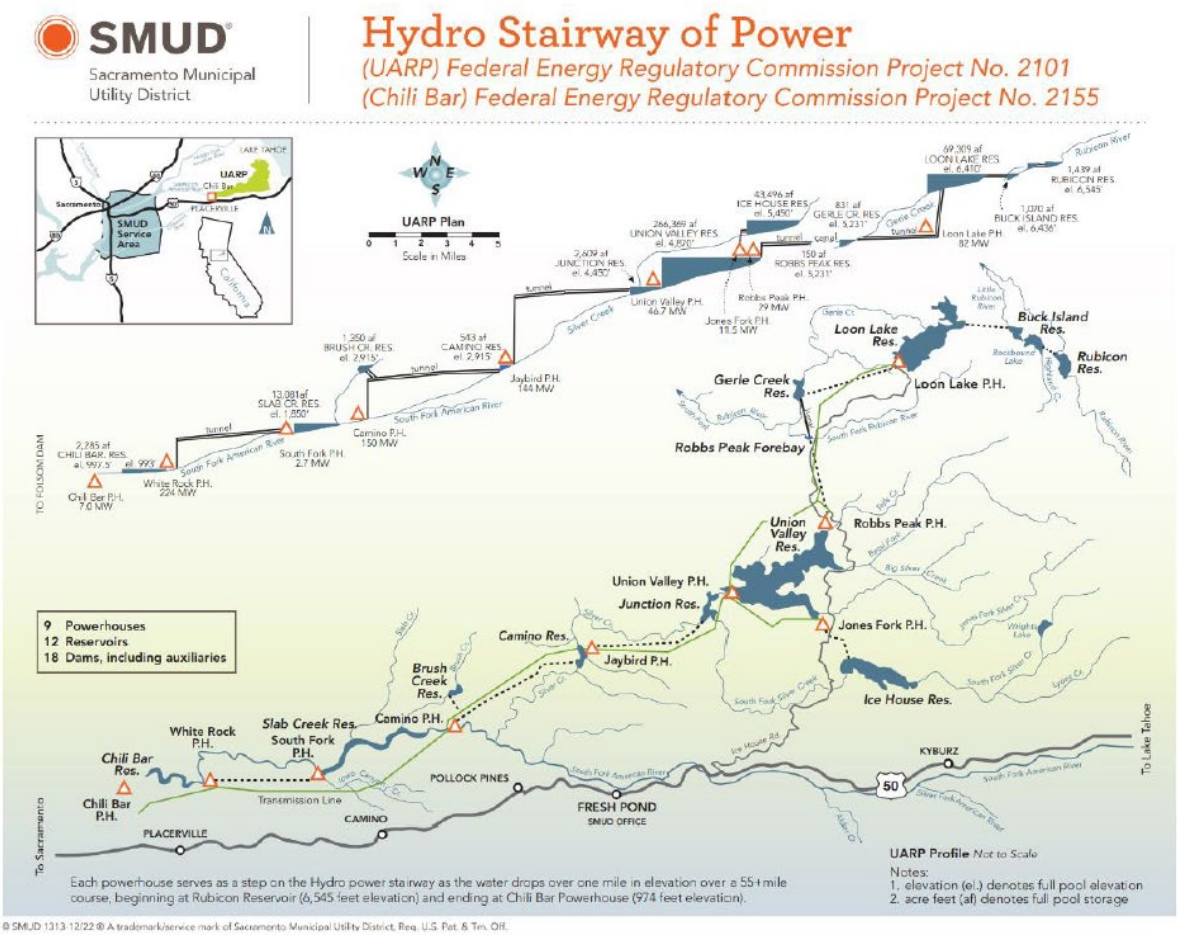
Lower American River at Watt Ave (RSTs) – Daily catch of unmarked Chinook Salmon and daily average discharge at Fair Oaks from April 1st to May 16th during the 2023 Lower American River rotary screw trap survey season.

Lower American River at Watt Ave (RSTs):
Daily fork length distribution by life stage of unmarked Chinook Salmon measured during the 2023 Lower American River rotary screw trap survey season.



Lower American River at Watts Ave (RSTs) – Daily fork length distribution by life stage of unmarked Chinook Salmon measured during the 2023 Lower American River rotary screw trap survey season.

Lower American River RST CalFish Webpage:
https://www.calfish.org/ProgramsData/ConservationandManagement/CentralValleyMonitoring/SacramentoValleyTributaryMonitoring/LowerAmericanRiver-RSTMonitoring.aspx



Map – Hydro Stairway Power from the Sacramento Municipal Utility District shows 9 powerhouses, 12 reservoirs, and 18 dams including auxiliaries.

Hydrology Water Report for Water Year 2023

Fresh Pond Precipitation

May precipitation through 5/15/2023 is 2.13 inches, which is 71.7% of the May average of 2.97 inches. Precipitation for the water year to date is 79.34 inches which is 147.7% of average to date (53.70 inches) and 138.4% of the entire water year average of 57.32 inches.

Runoff and Snowpack Water Content

Runoff into storage reservoir basins is 162.2% of median to date through 5/15/2023. The snowpack is 217.2% of average at selected snow sensors: Robbs PH, Robbs Saddle, Van Vleck, Alpha, and Schneider.

Table 5. Fresh Pond Precipitation

Month	Current WY	Hist. Avg	% of Avg.
Oct	0.00	3.30	0%
Nov	6.33	6.87	92%
Dec	15.08	9.14	165%
Jan	27.51	9.55	288%
Feb	6.32	9.50	67%
Mar	21.32	9.06	235%

Month	Current WY	Hist. Avg	% of Avg.
Apr	0.65	4.84	13%
May	2.13	2.97	72%
Jun	0.00	0.79	0%
Jul	0.00	0.08	0%
Aug	0.00	0.20	0%
Sep	0.00	1.02	0%
Total	73.34	57.32	138%

Table 6. SMUD Storage Reservoirs

Reservoir Storage	Hist. Avg Acre-ft	Hist. Avg % Full	Current Acre-Ft	Current % Full	Prior Year Acre-ft	Prior Year % Full	Capacity Acre-ft	Winter Acre-ft
Union Valley Reservoir	247,816	93%	252,513	94.8%	249,458	94%	266,370	255,046
Ice House Reservoir	36,524	84%	34,079	78.3%	38,293	88%	43,500	34,855
Loon Lake Reservoir	56,523	82%	36,000	51.9%	58,215	84%	69,310	69,310
Total Reservoir Storage	340,863	90%	322,592	85.1%	345,966	91%	379,180	329,211

Data listed here are always % of maximum capacity with gates closed As of today. Union Valley gates are OPEN, Ice House gates are CLOSE, Robbs Peak gates are OPEN.

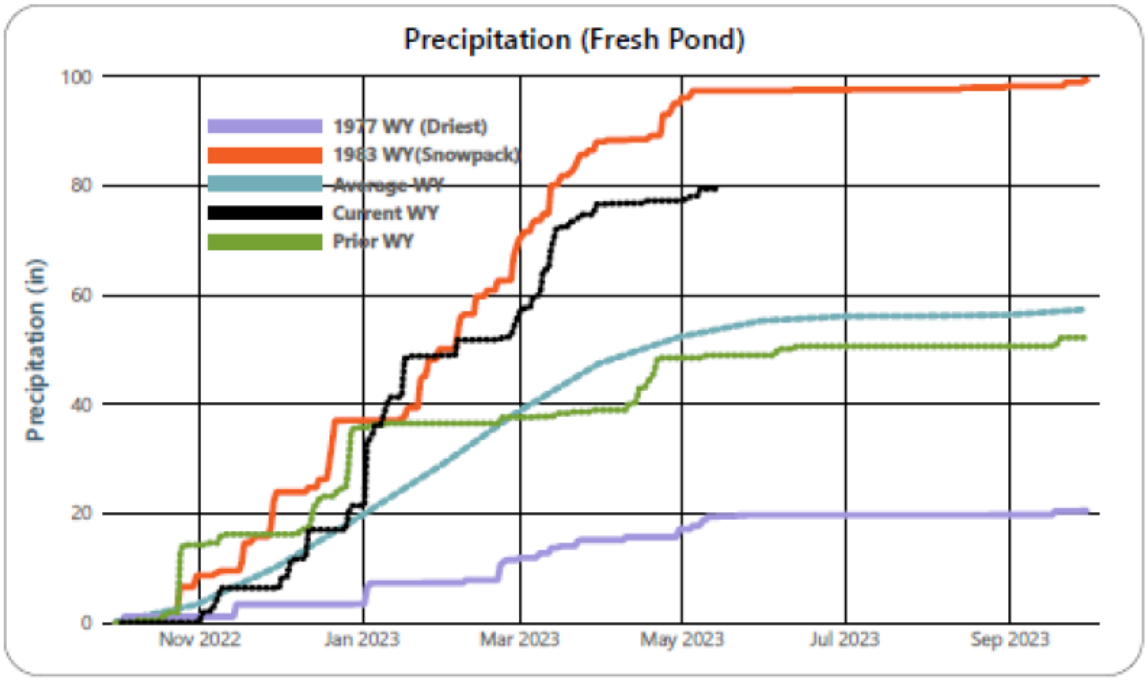


Figure 1. WY 2023 Precipitation (Fresh Pond)

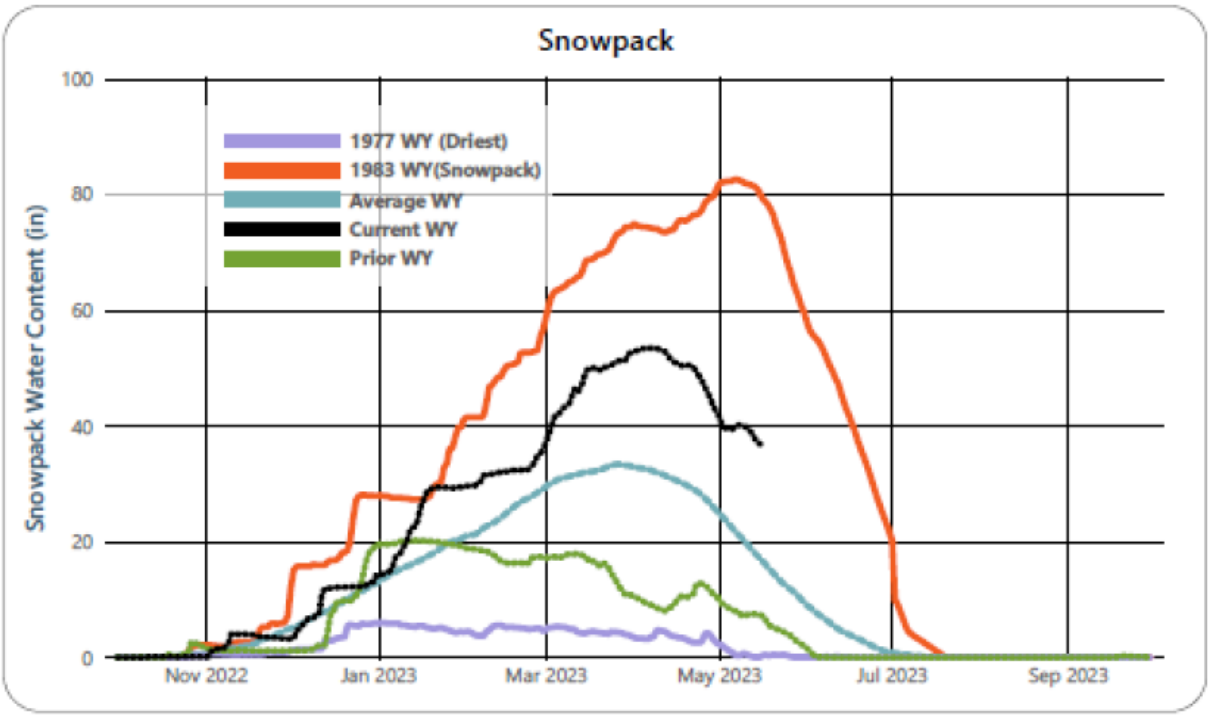


Figure 2. WY 2023 snowpack

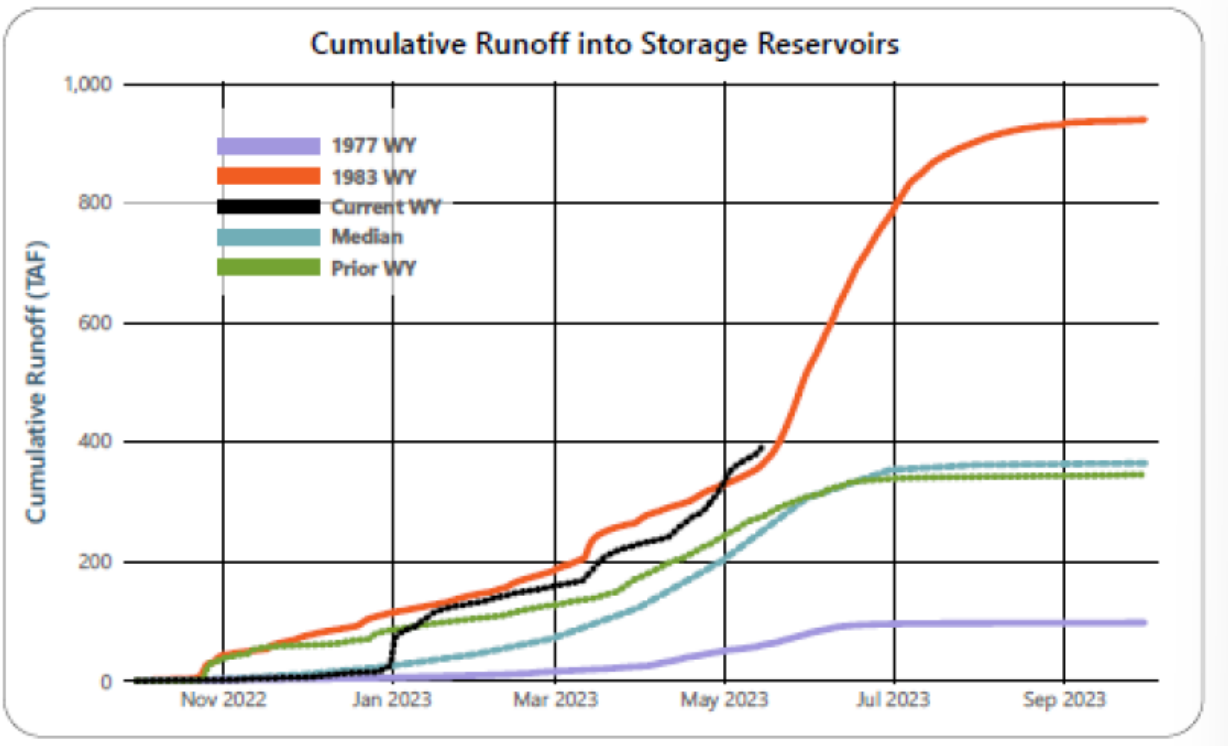


Figure 3. WY 2023 Cumulative Runoff into Storage Reservoirs

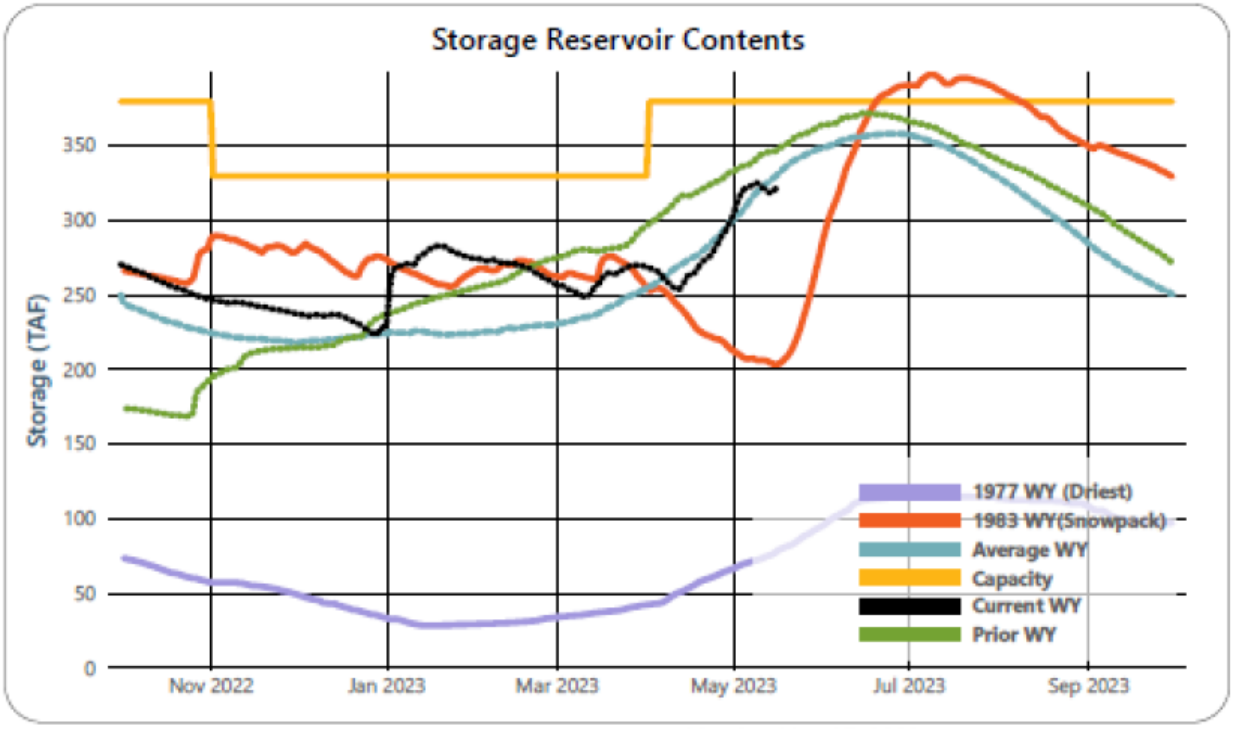
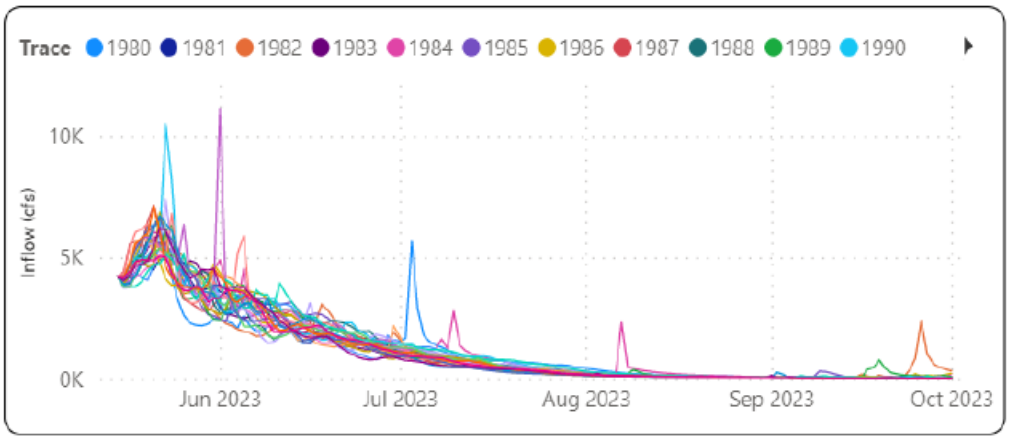


Figure 4. WY 2023 Storage Reservoir Contents

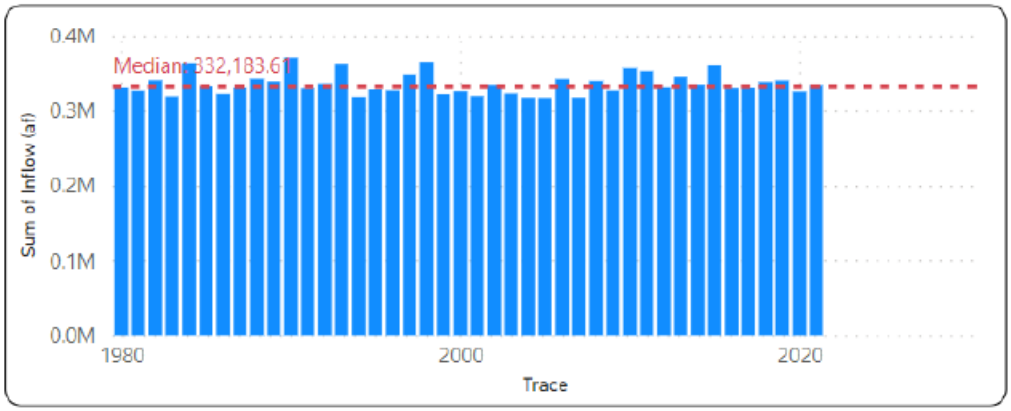
Subbasin

Table 7. Subbasin Storage in Acre-Feet as of May 16, 2023.

Subbasin	Gated Capacity	Ungated Capacity	Current Storage	Room (Gated)	Median Inflow
Loon	69,310	69,310	36,638	32,672	125,499
Ice House	43,500	34,855	35,208	8,292	56,993
Union Valley	266,370	255,046	251,391	14,979	112,792

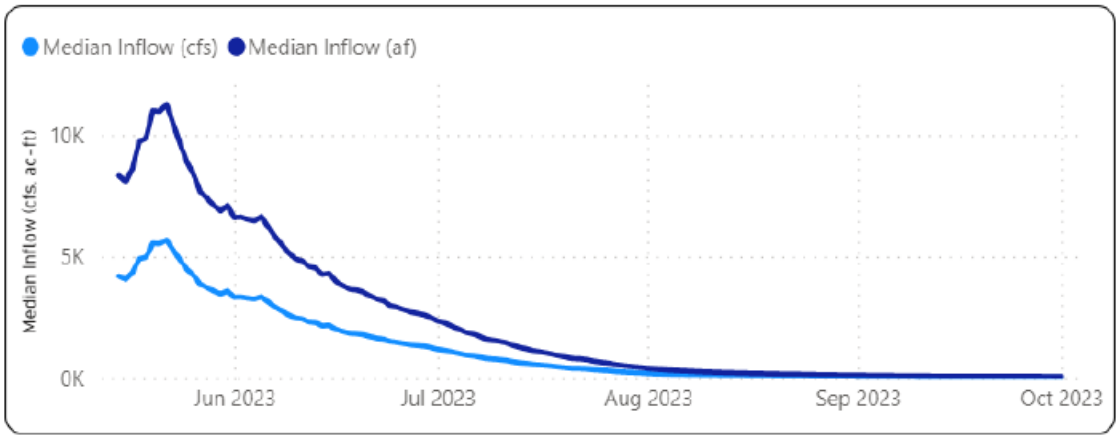


Line graph for inflow for Loon, Robbs/Gerle, Ice House, and Union Valley from May 15 2023 to October 1, 2023.



Forecast Issuance: Monday, May 15, 2023

Bar graph for subbasin trace and sum of inflow for Loon, Robbs/Gerle, Ice House, and Union Valley from 1980 to 2020 with the median being 332,183.6.



Line graph for median inflows for Loon, Robbs/Gerle, Ice House, and Union Valley from May 2023 to October 2023.

Forecasted Inflow to Folsom Lake

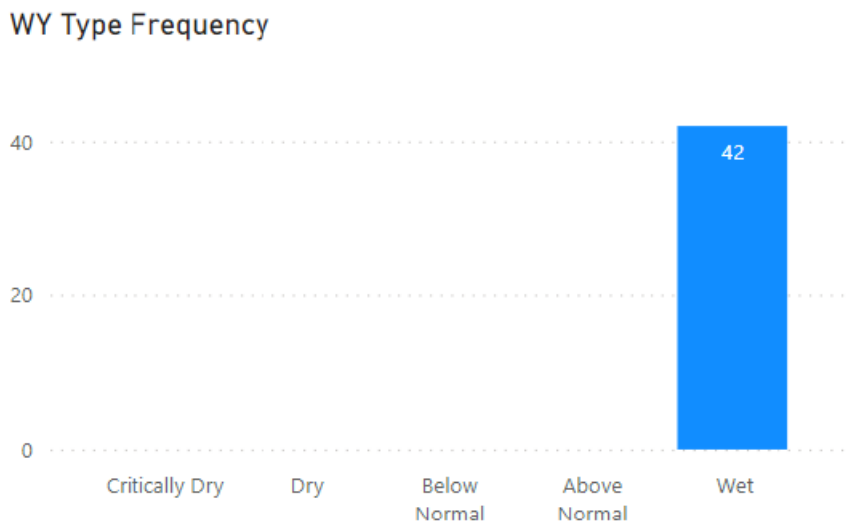
Results are computed for the current water year using the observed inflow to date coupled with the ensemble daily forecast issues by the California Nevada River Forecasting Center.

- Inflow Observed to Date (TAF): 3, 533*
- Median WY Inflow Forecast (TAF): 4, 898*
- Median WY Type: Wet*

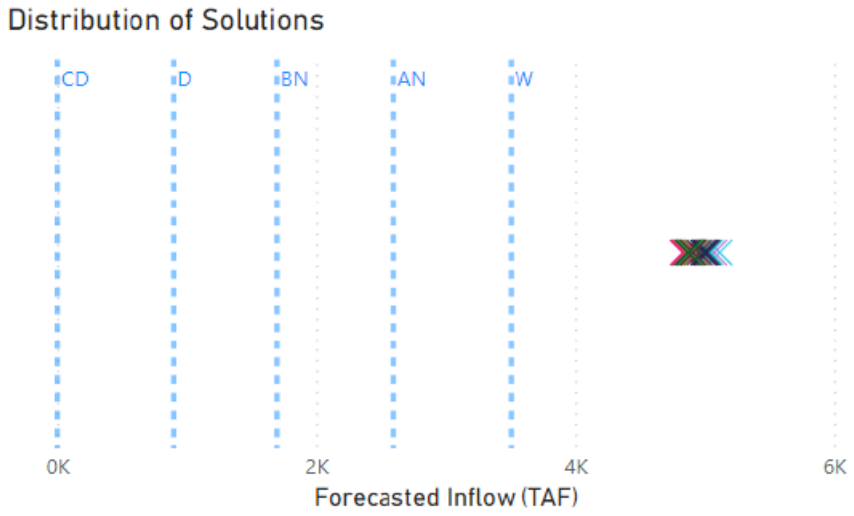
* Observed Data through 5/15/2023 and CNRFC Forecast Issuance Date: 5/15/2023

Table 8. Forecasted WY Totals

Model Year	WY Total (TAF)	WY Type
1980	4,882.75	Wet
1981	4,877.35	Wet
1982	4,909.65	Wet
1983	4,843.45	Wet
1984	4,992.45	Wet
1985	4,894.75	Wet
1986	4,848.95	Wet
1987	4,881.65	Wet
1988	4,935.15	Wet
1989	4,932.25	Wet
1990	5,112.95	Wet
1991	4,892.95	Wet
1992	4,918.45	Wet
1993	5,075.05	Wet
1994	4,831.05	Wet
1995	4,871.75	Wet
1996	4,864.95	Wet
1997	4,995.45	Wet
1998	5,043.15	Wet
1999	4,857.05	Wet
2000	4,857.85	Wet
2001	4,846.25	Wet
2002	4,905.75	Wet
2003	4,855.15	Wet
2004	4,834.65	Wet
2005	4,894.55	Wet
2006	4,943.95	Wet
2007	4,850.05	Wet
2008	4,915.45	Wet
2009	4,869.75	Wet
2010	5,026.95	Wet
2011	5,002.95	Wet
2012	4,902.05	Wet
2013	4,960.25	Wet
2014	4,888.05	Wet
2015	5,013.45	Wet
2016	4,902.85	Wet
2017	4,888.35	Wet
2018	4,912.45	Wet
2019	4,985.85	Wet
2020	4,872.85	Wet
2021	4,909.75	Wet



Bar graph shows the WY Type Frequency with 42 wet water years.



Graph shows the forecasted inflow (TAF) to Folsom Lake for distribution of solutions.

Table 9. Releases Below Chili Bar Dam

Observed or Forecasted	Month	Daily Mean Release Rate (cfs)	Monthly Total Release (acre-feet)
Observed	Oct-22	520	31977
Observed	Nov-22	387	22966
Observed	Dec-22	2208	135729
Observed	Jan-23	3980	244747
Observed	Feb-23	1862	103424
Observed	Mar-23	4573	281182
Observed	Apr-23	4141	246460
Forecast	May-23	6224	385891
Forecast	Jun-23	4661	279668

Observed or Forecasted	Month	Daily Mean Release Rate (cfs)	Monthly Total Release (acre-feet)
Forecast	Jul-23	1684	104402
Forecast	Aug-23	1412	87547
Forecast	Sept-23	936	56169

Time Series Plot from Sacramento Municipal Utility District showing water temperature daily mean (°C) from October 2022 to September 2023.

Bureau of Reclamation
Historical Archive and Report Database
Daily CVP Water Supply
May 16, 2023 | Run Date: 5/17/2023

Reservoir Releases in Cubic Feet/Second

Reservoir	Dam	WY 2022	WY 2023	15 Yr Median
Trinity	Lewiston	514	1,653	2,348
Sacramento	Keswick	3,525	13,050	8,819
Feather	Oroville (SWP)	2,200	15,000	2,300
American	Nimbus	1,509	10,806	3,273
Stanislaus	Goodwin	503	1,506	1,205
San Joaquin	Friant	1,500	9,035	911

Storage in Major Reservoirs in Thousands of Acre-Feet

Reservoir	Capacity	15 Yr Avg	WY 2022	WY 2023	% of 15 Yr Avg
Trinity	2,448	1,650	749	1,036	63
Shasta	4,552	3,599	1,823	4,450	124
Folsom	977	780	838	871	112
New Melones	2,420	1,447	901	1,623	112
Fed. San Luis	966	616	352	953	155
Total North CVP	11,363	8,092	4,663	8,933	110
Millerton	521	335	374	175	52
Oroville (SWP)	3,538	2,593	1,940	3,388	131

Accumulated Inflow for Water Year to Date in Thousands of Acre-Feet

Reservoir	Current WY 2023	WY 1977	WY 1983	15 Yr Avg	% of 15 Yr Avg
Trinity	983	539	1,614	820	120
Shasta	4,371	2,584	7,609	3,753	116
Folsom	3,318	867	4,835	1,962	169
New Melones	1,355	N/A	1,515	690	196
Millerton	2,012	508	1,607	853	236

Accumulated Precipitation for Water Year to Date in Inches

Reservoir	Current WY 2023	WY 1977	WY 1983	Average (N Years)	% of Average	Last 24 Hours
Trinity at Fish Hatchery	35.84	21.75	37.91	28.49 (63)	126	0.00
Sacramento at Shasta Dam	71.17	32.91	83.60	56.04 (68)	127	0.00
American at Blue Canyon	77.92	N/A	112.31	61.60 (49)	126	0.00

Reservoir	Current WY 2023	WY 1977	WY 1983	Average (N Years)	% of Average	Last 24 Hours
Stanislaus at New Melones	46.91	N/A	36.55	25.92 (46)	181	0.00
San Joaquin at Huntington Lk	65.85	11.50	65.40	38.48 (50)	171	0.00

April 2023 | Folsom Lake Daily Operations | Run Date: 4/19/2023

Day	Elev	Storage (1000 Acre-Feet) in Lake	Storage (1000 Acre-Feet) Change	Compu-ted* Inflow C.F.S.	Release - C.F.S. River Power	Release - C.F.S. River Spill	Release - C.F.S. River Outlet	Pump-ing Plant	Evap. - C.F.S.	Evap. - Inches	Precip Inches
		804.6									
1	451.16	817.5	12.8	14,612	6,971	1,012	0	97	58	0.17	0.00
2	452.16	827.8	10.3	13,189	7,891	0	0	84	0	0.00	0.26
3	452.60	832.4	4.6	10,492	8,055	0	0	98	34	0.10	0.00
4	452.81	834.6	2.2	9,299	8,093	0	0	105	0	0.00	0.11
5	452.89	835.4	0.8	8,581	8,005	0	0	123	34	0.10	0.00
6	452.87	835.2	-0.2	8,196	7,023	1,146	0	122	10	0.03	0.15
7	452.81	834.6	-0.6	7,952	5,896	2,200	0	122	48	0.14	0.00
8	452.78	834.2	-0.3	8,043	8,023	0	0	125	52	0.15	0.00
9	452.84	834.9	0.6	8,501	7,171	829	0	121	66	0.19	0.00
10	452.82	834.7	-0.2	8,321	5,389	2,835	0	136	66	0.19	0.00
11	452.84	834.9	0.2	8,574	6,343	1,910	0	147	69	0.20	0.00
12	453.07	837.3	2.4	9,547	8,088	0	0	179	73	0.21	0.00
13	453.47	841.4	4.2	10,776	6,453	1,937	0	189	90	0.26	0.00
14	454.34	850.6	9.1	13,002	6,343	1,768	0	192	104	0.30	0.00
15	455.38	861.5	11.0	14,674	7,994	859	0	192	105	0.30	0.00
16	456.32	871.5	10.0	16,573	8,034	3,214	0	193	113	0.32	0.00
Totals			66.9	170,332	115, 772	17,710	0	2,225	922	2.66	0.52
Acre-Feet			66,900	337.854	229,634	35,128	0	4,413	1,829		

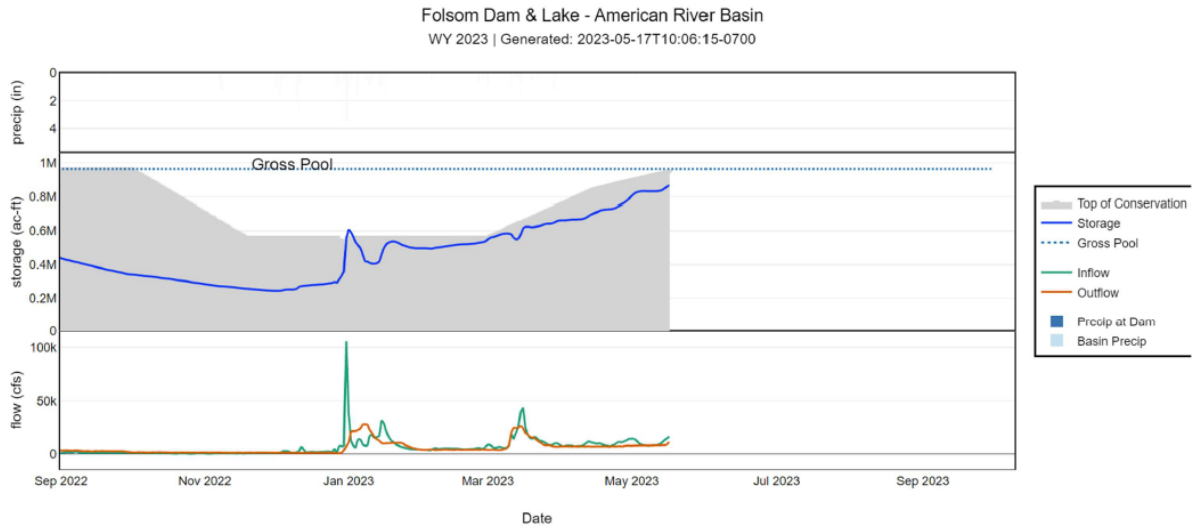
* Computed inflow is the sum of change in storage, releases, pumping, and evaporation

Summary: Release (acre-feet)

Power	229,634
Spill	35,128
Outlet	0
Pumping Plant	4,413
Total Releases	269,175

Summary: Precipitation (Month/Inches)

This month	0.52
October 1, 2022 to date	30.81



Folsom Dam & Lake – American River Basin
2023-04-19T11:06:17-0700

Isobath 04/01–04/30 (Mean Daily Temperature, Release, Storage, Unit Shutter Position/Load Percentage

MDT = Mean Daily Temperature (°F)
USP/LP = Unit Shutter Position/Load Percentage

Date	MDT, Water, NFA	MDT, Water, ARP	MDT, Water, AFD[1]	MDT, Water, AFO	MDT, Water, AWP	MDT, Water, AWB	MDT, Air, CSU	Release (CFS) Nimbus	Storage (TAF) Folsom	USP/LP Unit 1	USP/LP Unit 2	USP/LP Unit 3
Mar	44.9	45.5	46.2	47.2	46.9	47.0	50.4	610		T	T	T
04/01	47.4	47.1	47.6	48.8	48.8	49.5	53.7	7048	666	T 32.9	T 33.4	T 34
04/02	48.2	46.9	47.0	48.9	49.0	49.9	53.5	7050	667	T 33.5	T 33.4	T 33
04/03	47.6	46.5	47.5	48.1	48.1	48.9	49.8	7020	669	T 26.4	T 36.7	T 37
04/04	45.8	45.9	47.7	48.9	48.7	#	49.2	7004	670	T 20.6	T 39.7	T 40
04/05	45.6	45.3	47.7	49.0	49.0	#	51.0	6981	672	T 25.7	T 37.9	T 36
04/06	46.5	45.3	47.8	49.1	49.1	#	54.5	6994	671	T 35.3	T 26.0	T 39
04/07	47.7	45.5	47.6	49.1	49.1	#	55.0	7015	672	T 33.4	T 27.7	T 39
04/08	48.8	47.0	47.6	49.1	49.1	#	57.9	7020	673	T 33.6	T 33.4	T 33
04/09	50.1	47.9	47.6	49.1	49.4	#	60.6	7032	673	T 34.0	T 33.5	T 33
04/10	51.3	48.6	47.5	49.3	49.6	#	64.7	7058	677	T 37.2	T 28.7	T 34
04/11	51.8	49.6	47.8	49.4	49.7	50.8	61.3	7078	684	T 38.6	T 39.0	T 22
04/12	50.3	49.7	48.1	49.4	49.4	50.1	54.3	7003	694	T 39.3	T 31.8	T 29
04/13	48.7	48.8	49.3	49.8	49.6	50.3	56.5	6949	702	T 14.9	T 49.9	T 35
04/14	48.2	48.5	49.8	51.4	51.3	51.9	56.6	7032	708	T 1.4	T 43.4	T 55
04/15	48.6	48.5	49.0	51.8	51.9	52.6	57.2	7036	713	T 0.5	T 49.9	T 50
04/16	49.5	48.6	48.6	50.9	51.2	52.1	55.6	7036	719	T 0.5	T 50.4	T 49
04/17	49.4	48.0	48.6	50.4	50.4	51.2	53.8	7043	725	T 0.5	T 49.5	T 50
04/18	48.1	48.3	48.8	50.2	50.3	51.0	52.5	7008	728	T 0.8	T 49.0	T 50
04/19	47.3	47.8	49.7	51.0	50.8	51.3	52.7	7009	730	T 17.0	T 41.8	T 41
04/20	47.7	47.5	48.1	51.0	51.4	52.3	58.3	7020	731	T 33.2	T 33.2	T 34
04/21	49.2	47.9	48.2	49.9	50.3	#	67.0	6933	732	T 33.5	T 33.3	T 33
04/22	51.3	48.8	48.6	50.0	50.4	#	69.1	6953	733	T 33.0	T 33.4	T 34
04/23	51.3	48.8	48.6	50.0	50.4	#	69.1	6953	733	A 33.0	T 33.4	T 34
04/24	51.8	51.0	48.5	50.3	50.7	52.6 ?	65.3	6955	745	A 33.3	A 33.4	A A
04/25	51.1	50.8	49.5	50.4	50.7	51.7	67.8	7014	753	A 32.6	A 34.9	A 32
04/26	51.1	50.4	49.4	51.8	52.2	53.0	70.6	7006	760	A 33.2	A 33.4	A 33
04/27	51.8	50.8	49.6	51.3	51.7	52.7	74.6	7310	769	A 33.5	A 33.5	A 33
04/28	52.2	51.1	49.6	51.4	51.8	52.9	73.8	7503	779	A 33.4	A 33.5	A 33
04/29	52.0	51.2	49.5	51.3	51.8	52.8	69.3	7731	792	0.00 33.8	0.00 33.2	0.0 33

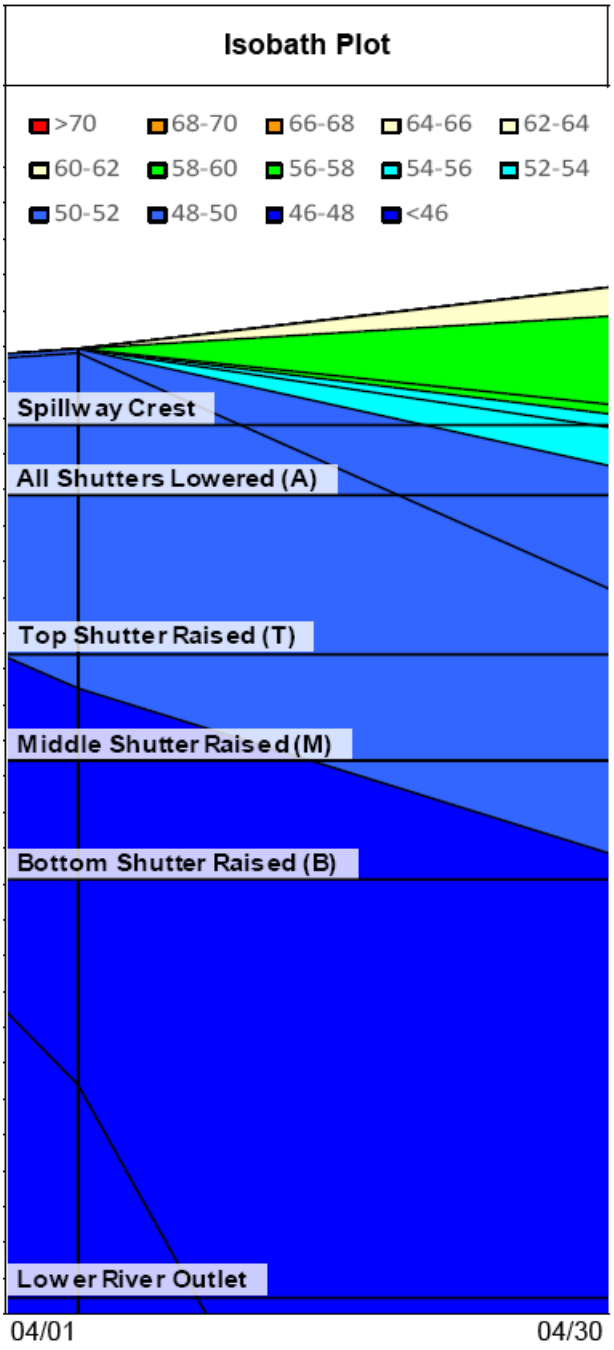
Date	MDT, Water, NFA	MDT, Water, ARP	MDT, Water, AFD[1]	MDT, Water, AFO	MDT, Water, AWP	MDT, Water, AWB	MDT, Air, CSU	Release (CFS) Nimbus	Storage (TAF) Folsom	USP/LP Unit 1	USP/LP Unit 2	USP/LP Unit 3
04/30	51.5	51.2	49.7	51.4	51.6	52.6	60.7	7791	805	A 33.8	A 33.1	A 33
Apr	49.4	48.4	48.5	50.1	50.2	51.5	59.9	715				
						Total	AF	421654				

Legend:
? = 1-9 hours of data missing
! = 10 or more hours of data missing
= Station out of service

Monthly Averages

A = All Shutters Lowered
T = Top Shutter Raised
M = Middle Shutter Raised
B = Bottom Shutter Raised
O = Unit Outage

Notes:
[1] AFD is a weighted average based on hourly flow values, including generation, bypass and spill



Isobath Plot 04/01-04/30 (Showing Spillway Crest, All Shutters Lowered (A), Top Shutter Raised (T), Middle Shutter Raised (M), Bottom Shutter Raised (B), and Lower River Outlet)

Isobath 05/01–05/16 (Mean Daily Temperature, Release, Storage, Unit Shutter Position/Load Percentage

MDT = Mean Daily Temperature (°F)
USP/LP = Unit Shutter Position/Load Percentage

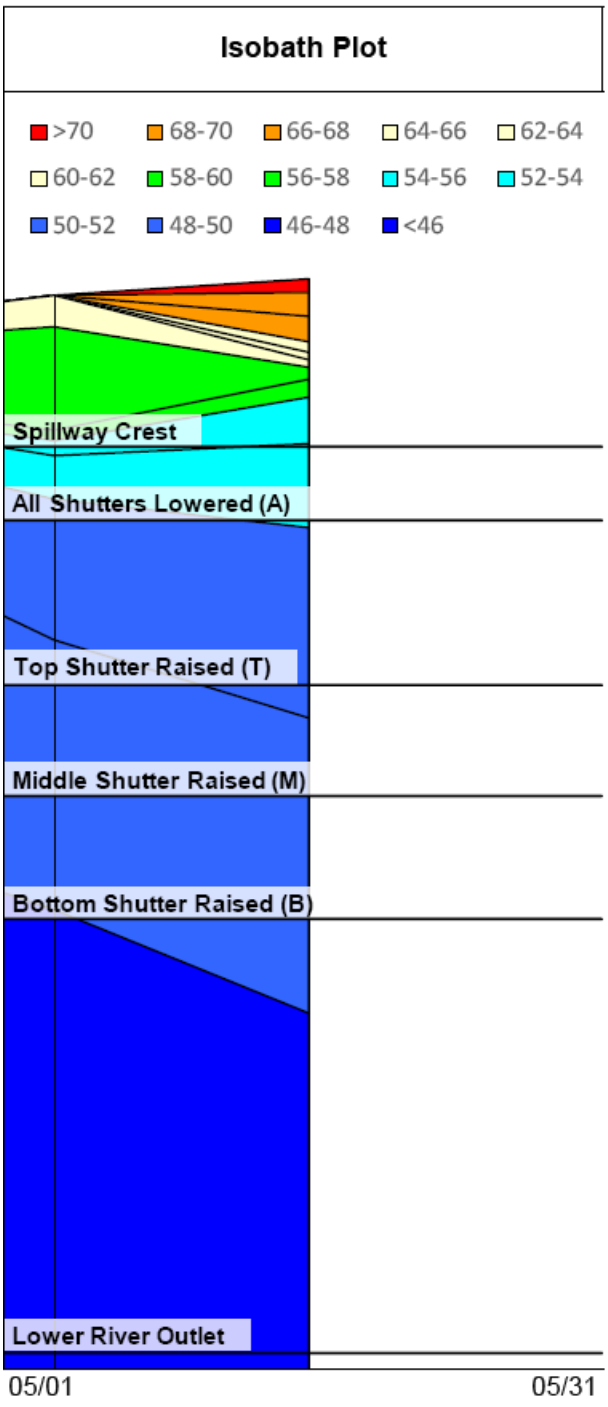
Date	MDT, Water, NFA	MDT, Water, ARP	MDT, Water, AFD[1]	MDT, Water, AFO	MDT, Water, AWP	MDT, Water, AWB	MDT, Air, CSU	Release (CFS) Nimbus	Storage (TAF) Folsom	USP/LP Unit 1	USP/LP Unit 2	USP/LP Unit 3
Apr	49.4	48.4	48.5	50.1	50.2	51.5	59.9	715	N/A	A	A	A
05/01	50.4	49.7	50.0	51.2	51.1	51.8	54.0	7749	817	A 36.8	A 26.7	A 36
05/02	48.6	48.6	49.8	51.3	51.2	51.8	53.2	7861	828	A 33.7	A 33.2	A 33
05/03	47.7	47.8	49.9	51.1	50.9	51.4	55.1	7992	832	A 33.3	A 33.4	A 33
05/04	47.5	46.6	50.0	50.8	50.7	51.2	55.8	7958	835	A 33.4	A 33.3	A 33
05/05	47.2	46.9	49.7	51.0	50.9	51.5	56.1	7947	835	A 33.3	A 33.4	A 33
05/06	47.5	47.2	50.3	51.1	51.0	51.7	56.5	7942	835	A 33.6	A 33.5	A 33
05/07	48.2	48.4	50.9	52.0	51.9	52.6	57.5	7975	835	A 33.5	A 33.4	A 33
05/08	49.0	47.8	49.9	52.1	52.4	53.1	57.7	7988	834	A 33.3	A 33.4	A 33
05/09	49.6	48.2	50.5	51.5	51.6	52.4	60.0	7959	835	A 33.3	A 33.4	A 33
05/10	50.7	49.2	51.3	52.4	!	53.2	58.6	7974	835	A 33.3	A 33.4	A 33
05/11	52.3	50.3	51.2	52.9	!	54.0	61.2	7998	835	A 33.7	A 33.5	A 33
05/12	53.4	51.5	50.1	53.0 ?	53.6 !	54.3	68.1	8001	837	A 33.4	A 33.5	A 33
05/13	54.2	52.8	51.4	52.5 ?	52.5	53.4	74.4	7928	841	A 34.5	A 33.7	A 32
05/14	54.1	53.8	51.5	53.7 ?	54.1	55.0	73.6	7922	851	A 33.5	A 33.5	A 33
05/15	53.4	53.9	50.7	53.0	53.8	54.9	69.9	8645	862	A 33.4	A 33.4	A 33
05/16	52.8	53.2	51.8	53.5	53.6	54.2	73.5	10806	871	A 33.3	A 33.4	A 33
05/17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/22	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
05/31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	A	A
May	50.4	49.7	50.6	52.1	52.1	52.9	61.6	839	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	Total	AF	259129	N/A	N/A	N/A	N/A

Legend:
? = 1-9 hours of data missing
! = 10 or more hours of data missing
= Station out of service

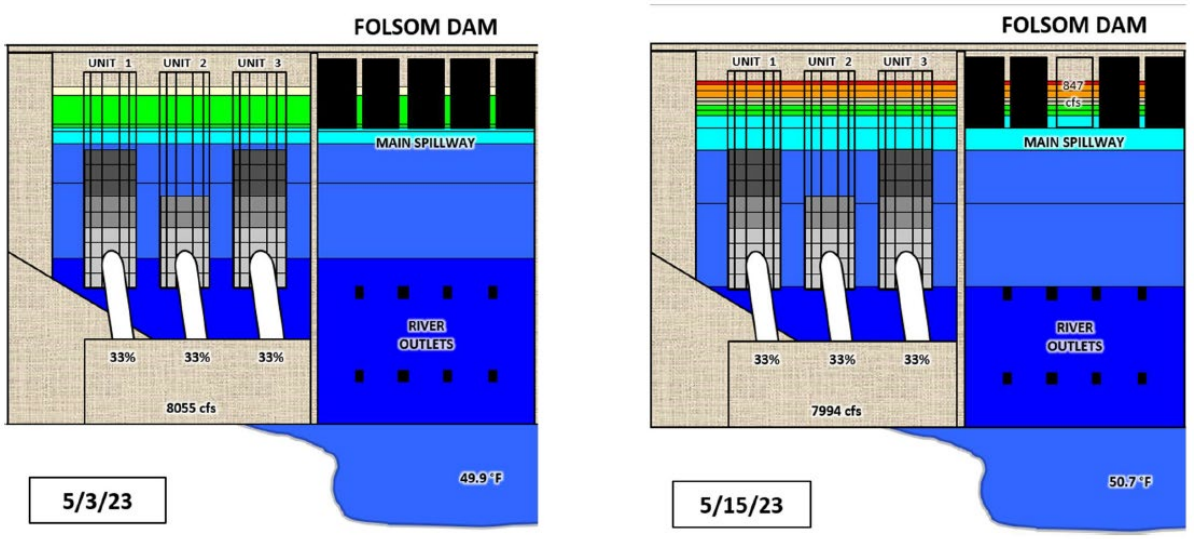
November Monthly Averages

A = All Shutters Lowered
T = Top Shutter Raised
M = Middle Shutter Raised
B = Bottom Shutter Raised
O = Unit Outage

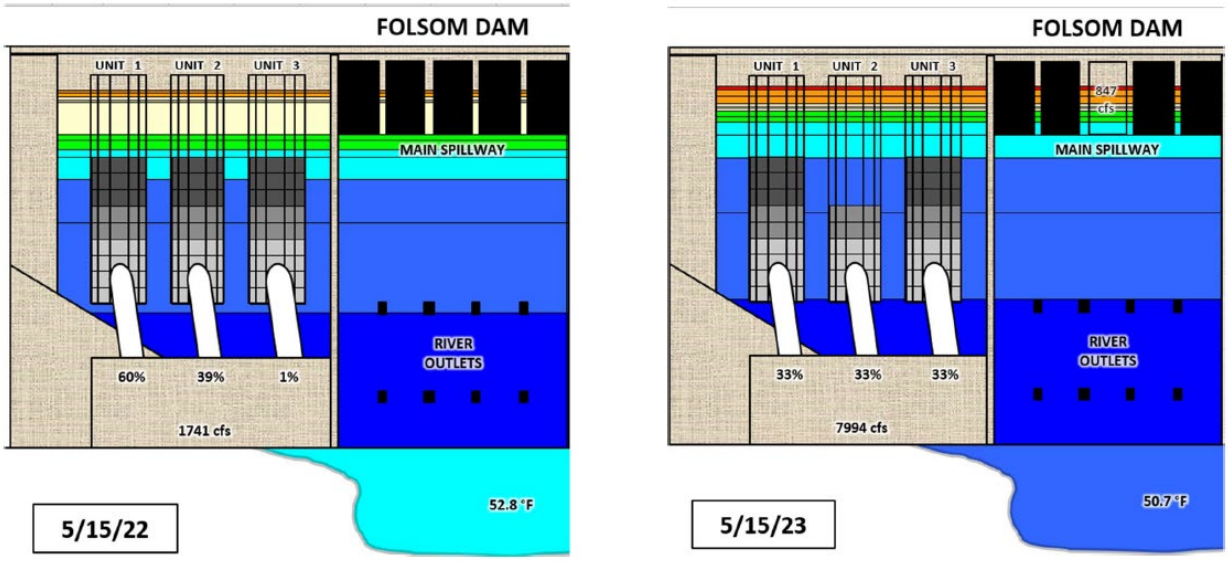
Notes:
[1] AFD is a weighted average based on hourly flow values, including generation, bypass and spill



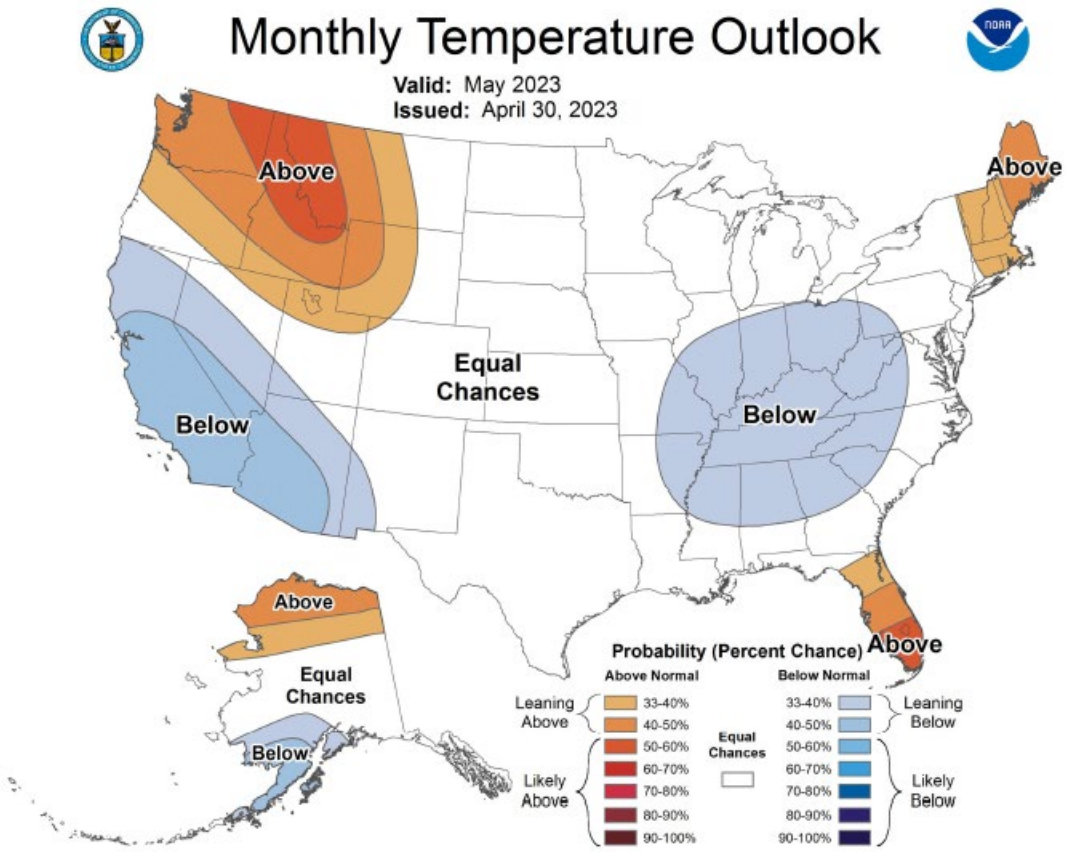
Isobath Plot 05/01-05/31. Showing Spillway Crest, All Shutters Lowered (A), Top Shutter Raised (T), Middle Shutter Raised (M), Bottom Shutter Raised (B), and Lower River Outlet



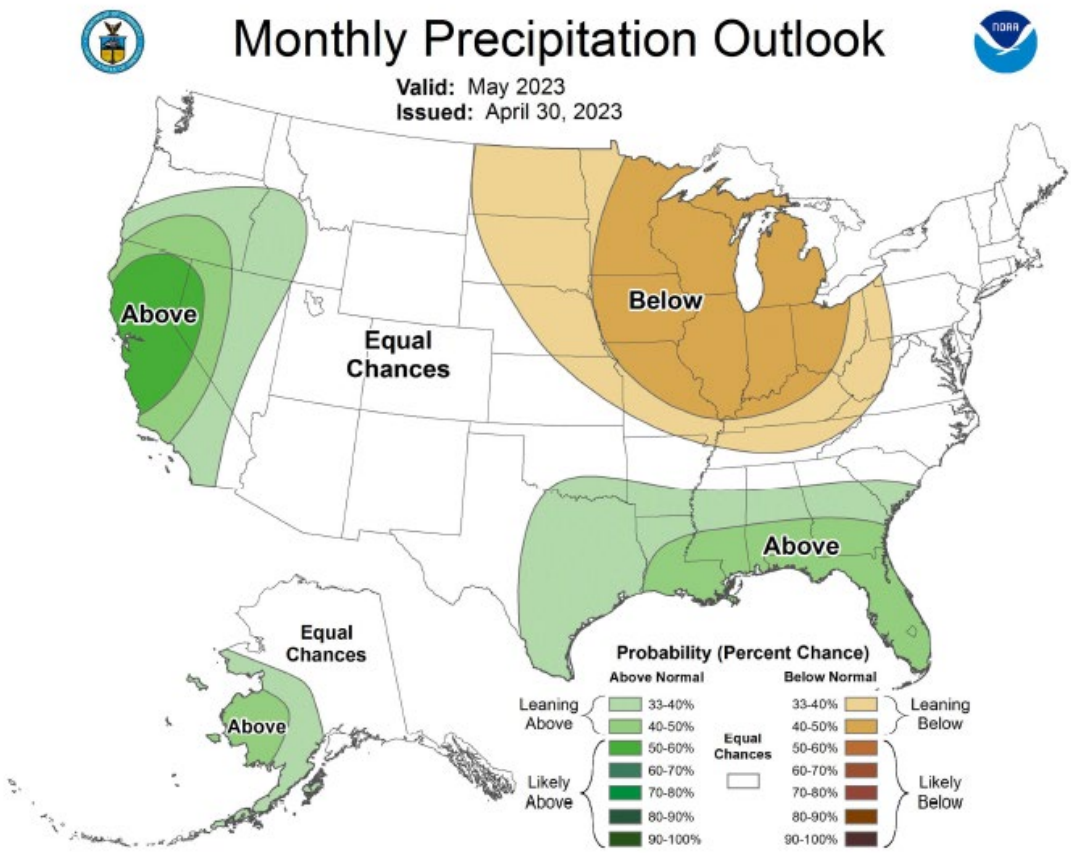
Graphic showing Folsom Dam on 05/03/23 with a temperature of 49.9 ˚F and 05/15/23 with a temperature of 50.7 ˚F



Graphic showing Folsom Dam on 05/15/22 with a temperature of 52.8 ˚F and 05/15/23 with a temperature of 50.7 ˚F



Map – U.S. Monthly Temperature Outlook During the Valid Period, Valid for May 2023; Released April 30,2023.



Map – Monthly Precipitation Outlook; Valid May 2023; Issued April 30, 2023

American River Summary Conditions – May (On-going)

Releases are currently at 20,000 cfs

- April 27, 2023, from 7,000 cfs to 7,500 cfs
- April 29, 2023, from 7,500 cfs to 8,000 cfs
- May 15, 2023, from 8,000 cfs to 10,000 cfs
- May 16, 2023, from 10,000 cfs to 12,000 cfs

Temperature Management:

- Top Shutters: Units 1, 2, and 3 -- raised
- Middle Shutters: Units 1, 2, and 3 -- lowered
- Bottom Shutters: Units 1, 2, and 3 -- lowered

Folsom Shutter Configuration and Changes:
Scheduled to lower the top shutters

American River 90% Outlook:
May 90% Exceedance

Storages

Federal End of the Month Storage/Elevation (TAF/Feet)

Facility	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan
Folsom Storage	917	835	708	581	571	488	411	351	357
Folsom Elevation	461	453	440	426	425	415	405	396	396

Monthly River Release (TAF/cfs)

Facility	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan
American TAF	492	416	277	246	119	123	119	123	108
American cfs	8000	7000	4500	4000	2000	2000	2007	2000	1750

Storages

Federal End of the Month Storage/Elevation (TAF/Feet)

Facility	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan
Folsom Storage	901	898	789	637	601	503	476	466	495
Folsom Elevation	459	459	448	433	429	417	413	412	416

Monthly River Release (TAF/cfs)

Facility	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan
American TAF	584	416	277	277	149	123	120	123	123
American cfs	9500	7000	4500	4500	2500	2000	2024	2000	2000

American River Baseflow Table

Month	Index Used for Index-based MRR	Index Based MRR	RDPB-based MRR for fall-run Chinook salmon (applicable in Jun and Feb)	RDPB-based MRR for steelhead (applicable Feb to May)	Controlling MRR	Actual Average Monthly Nimbus releases[1]
October	May ARI[2] (50% exceedance)	1,326 cfs	Not applicable	Not applicable	1,326 cfs	1,462 cfs
November	May ARI[2] (50% exceedance)	1,326 cfs	Not applicable	Not applicable	1,326 cfs	1,352 cfs
December	May ARI[2] (50% exceedance)	1,326 cfs	Not applicable	Not applicable	1,326 cfs	1, 928 cfs
January	January SRI (75% exceedance)	1,750 cfs	1,326 cfs	Not applicable	1,326 cfs	14,060 cfs
February	February ARI (50% exceedance)	1,750 cfs	1,750 cfs	1,750 cfs	1,750 cfs	4,021 cfs
March	March ARI (50% exceedance)	1,750 cfs	1,750 cfs	1,750 cfs	1,750 cfs	12,616 cfs
March	March ARI[3] (90% exceedance)	1,750 cfs	1,750 cfs	1,750 cfs	1,750 cfs	12,616 cfs
April	April ARI (50% exceedance)	1,500 cfs	Not applicable	1,500 cfs	1,500 cfs	7,088 cfs
April	April ARI[3] (90% exceedance)	1,500 cfs	Not applicable	1,500 cfs	1,500 cfs	7,088 cfs
May	May ARI (50% exceedance)	1,500 cfs	Not applicable	1,500 cfs	1,500 cfs	N/A
May	May ARI[3] (90% exceedance)	1,500 cfs	Not applicable	1,500 cfs	1,500 cfs	N/A

MRR= Minimum Release Requirements; RDPA= Redd Dewatering Protective Adjustment; ARI= American River Index; SRI= Sacramento River Index

[1] Average of daily release over the month from NAT station on CDEC.
[2] Since new forecasts are usually provided January through May, the May ARI would also be used for June–September of the current water year and October–December of the next water year unless there is an update to the ARI after May.